

ABSTRACT OF THE INVENTION

A. service discovery stream is represented as an N-ary tree that provides the capability to change, add, or remove an element with only one modification to the entire tree. The number of elements in a stream are counted and each element and the element's children are converted into a node of the N-ary tree. Each node in the tree can have any number of siblings, which are linked to each other using a doubly linked list.